

Claims

What is claimed is:

- 5 1. A method for treating a patient having graft-versus-host disease, comprises: administering to the patient an adenosine deaminase inhibitor in a pharmaceutically effective amount.
2. The method of claim 1, wherein the adenosine deaminase
10 inhibitor is selected from the group consisting of pentostatin, fludarabine monophosphate, and cladribine.
3. The method of claim 1, wherein the adenosine deaminase inhibitor is administered orally to the patient.
- 15 4. The method of claim 1, wherein the adenosine deaminase inhibitor is administered parenterally to the patient.
5. The method of claim 1, wherein the patient has acute graft-
20 versus-host disease.
6. The method of claim 5, wherein the patient has also failed at least one immunosuppressive regimen selected from the group consisting of prednisone, methylprednisolone, cyclophosphamide,
25 cyclosporin A, FK506, thalidomide, azathioprine, and daclizumab.
7. The method of claim 5, wherein the patient has received hematopoietic stem cell transplant and manifests grade 2 or greater acute graft-versus-host disease.

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8. The method of claim 7, wherein the adenosine deaminase inhibitor is pentostatin.

9. The method of claim 8, wherein pentostatin is administered at
5 0.25 – 1 mg/m²/day as a 20 minute intravenous (IV) infusion on days 1, 2 and 3.

10. The method of claim 5, further comprising: monitoring the improvement of the GVHD symptoms in the skin, mouth, fascia, and
10 liver.

11. The method of claim 11, further comprising: repeating the treatment with pentostatin at least once.

12. The method of claim 1, wherein the patient has chronic graft vs
15 host disease.

13. The method of claim 12, wherein the patient has also failed at least one immunosuppressive regimen selected from the group
20 consisting of prednisone, methylprednisolone, cyclophosphamide, cyclosporin A, FK506, thalidomide, azathioprine, and daclizumab.

14. The method of claim 11, wherein the patient has received hematopoietic stem cell transplant and has also failed to respond to
25 treatment with at least 2 mg/Kg of methylprednisolone or equivalent corticosteroid.

15. The method of claim 14, wherein the adenosine deaminase inhibitor is pentostatin.

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16. The method of claim 14, wherein pentostatin is administered to the patient at a dose between about 1-10 mg/m² each day for 3 consecutive days each month.
- 5 17. The method of claim 14, wherein pentostatin is administered to the patient at a dose between about 2-6 mg/m² each day for 3 consecutive days each month.
- 10 18. The method of claim 14, wherein pentostatin is administered to the patient at a dose between about 2-4 mg/m² each day for 3 consecutive days each month.
- 15 19. A method for preventing or reducing the risk of developing graft-versus-host disease in a recipient of an organ or tissue transplant, comprising:
administering to the transplant recipient an adenosine deaminase inhibitor in a pharmaceutically effective amount within a predetermined time window before or after the transplantation.
- 20 20. The method of claim 19, wherein the adenosine deaminase inhibitor is selected from the group consisting of pentostatin, fludarabine monophosphate, and cladribine.
- 25 21. The method of claim 19, wherein the adenosine deaminase inhibitor is administered orally to the transplant recipient.
22. The method of claim 19, wherein the adenosine deaminase inhibitor is administered parenterally to the transplant recipient.

23. The method of claim 19, wherein the adenosine deaminase inhibitor is pentostatin.

24. The method of claim 23, wherein pentostatin is administered orally to the transplant recipient 3 or 2 days before the transplantation.

25. The method of claim 23, wherein pentostatin is administered to the transplant recipient by intravenous infusion at a dose between about 0.1-2 mg/m².

26. The method of claim 23, wherein pentostatin is administered to the transplant recipient by intravenous infusion at a dose between about 0.5-1 mg/m².

27. The method of claim 23, wherein the transplant patient is transplanted with hematopoietic stem cells and treated in a myeloablative conditioning regimen.

28. The method of claim 27, wherein the transplant recipient is treated with pentostatin via oral administration at about 0.5-2 mg/m² on days -14, -13, -12 and -3, -2, -1 with 1200-1800 cGy irradiation prior to stem cell infusion.

29. The method of claim 28, further comprising: intravenously administering to the transplant recipient pentostatin on days +8 and +15 at a dose between about 1-2 mg/m².

30. The method of claim 23, wherein pentostatin is administered to the transplant recipient after the transplantation.

31. The method of claim 30, wherein the transplant recipient is transplanted with hematopoietic stem cells.

32. The method of claim 31, wherein pentostatin is administered to the transplant recipient at 0.5 – 1.5 mg/m²/day on days +8, +15, +22 and +30 following stem cell infusion.

33. The method of claim 19, further comprising: administering to transplant recipient an immunosuppressive agent selected from the group consisting of prednisone, methylprednisolone, cyclophosphamide, cyclosporin A, FK506, thalidomide, azathioprine, Daclizumab, Infliximab, MEDI-205, abx-cbl and ATG.

34. A method for ex vivo treatment of a tissue or organ transplant, comprising:
treating the tissue or organ transplant with an adenosine deaminase inhibitor in an effective amount such that activity of T-lymphocytes therein is substantially inhibited.

35. The method of claim 34, wherein the tissue or organ transplant is selected from the group consisting of stem cells, bone marrow, heart, liver, kidney, lung, pancreas, small intestine, cornea, and skin.

36. The method of claim 34, wherein the adenosine deaminase inhibitor is selected from the group consisting of pentostatin, fludarabine monophosphate, and cladribine.

37. The method of claim 34, wherein the activity of T-lymphocytes in the transplant is inhibited by at least 50%.

38. The method of claim 34, wherein the activity of T-lymphocytes in the transplant is inhibited by at least 80%.

39. The method of claim 34, wherein the activity of T-lymphocytes in the transplant is inhibited by at least 90%.

40. The method of claim 34, wherein treating the transplant includes storing the transplant in a preservation solution containing pentostatin.

41. The method of claim 40, wherein the preservation solution is Plegisol.

42. The method of claim 34, wherein treating the transplant includes washing the transplant with a buffer containing pentostatin prior to transplantation.

43. The method of claim 42, wherein the transplant is an isolated heart transplant.

44. The method of claim 43, wherein washing the heart includes flush perfusing the heart with the buffer containing about 0.1-10 μ M pentostatin.